F. D. STOWE.

SEAMER.

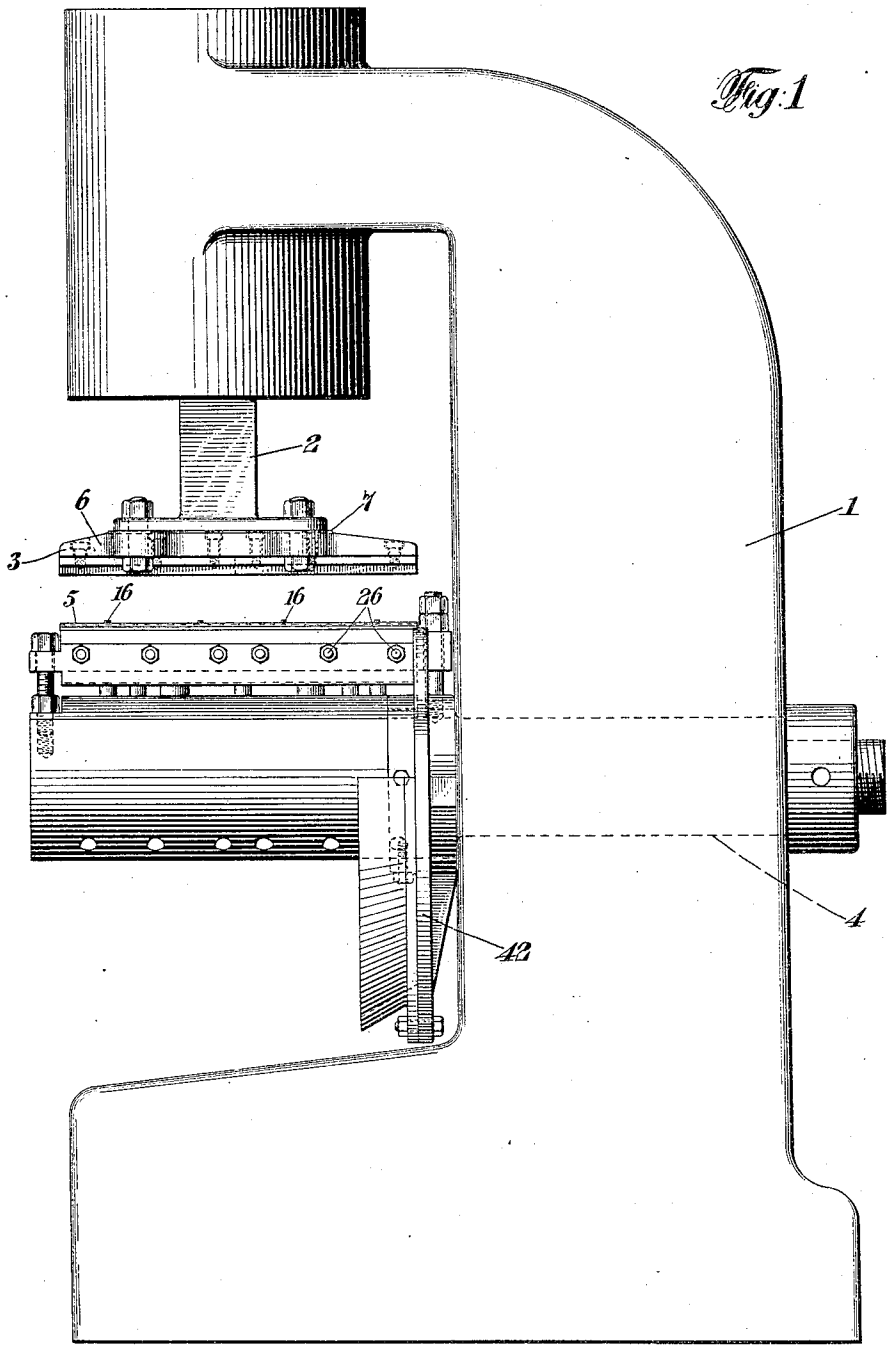
APPLICATION FILED FEB. 26, 1914.

1,306,449.

Patented June 10, 1919.

3 SHEETS—SHEET 1.

Fig. 1



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J. Freudenvoll

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3 SHEETS—SHEET 2.

Fig. 2

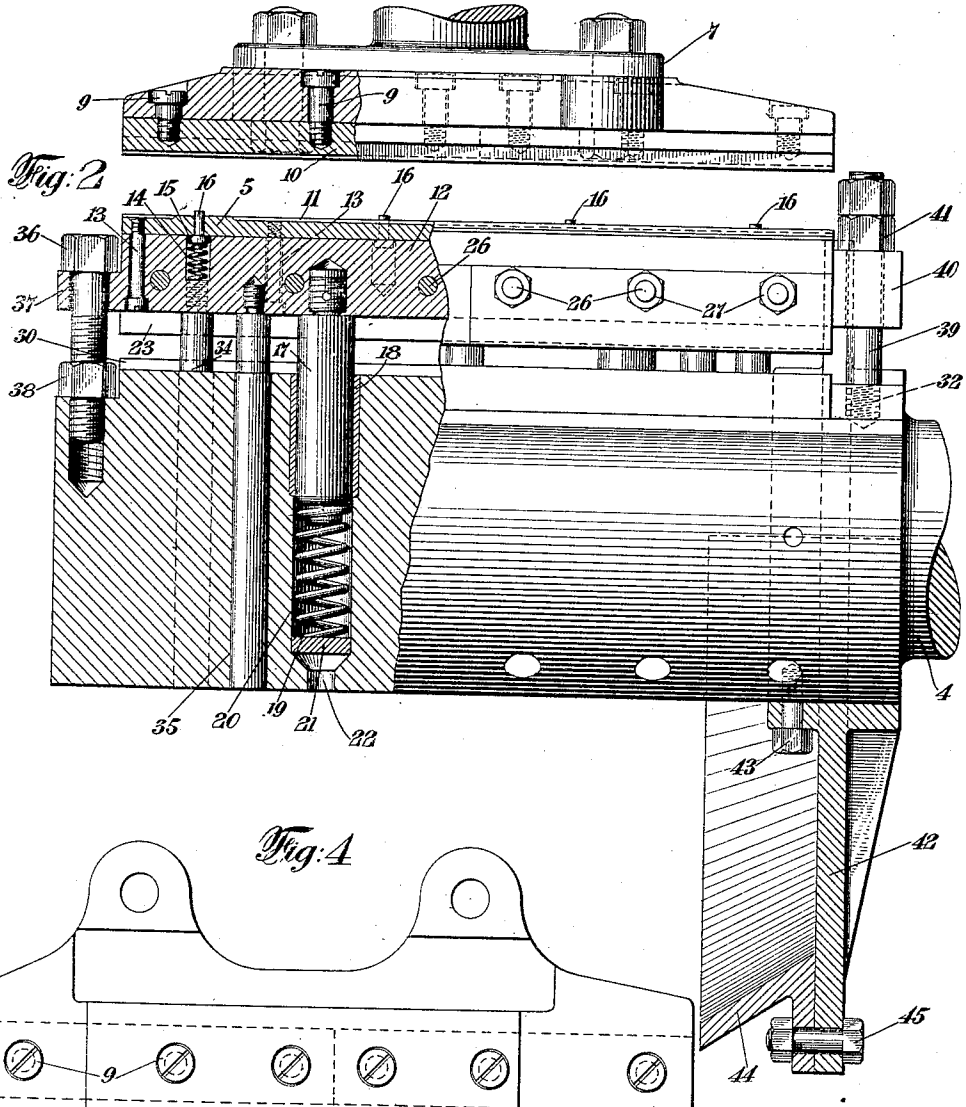

Fig. 4

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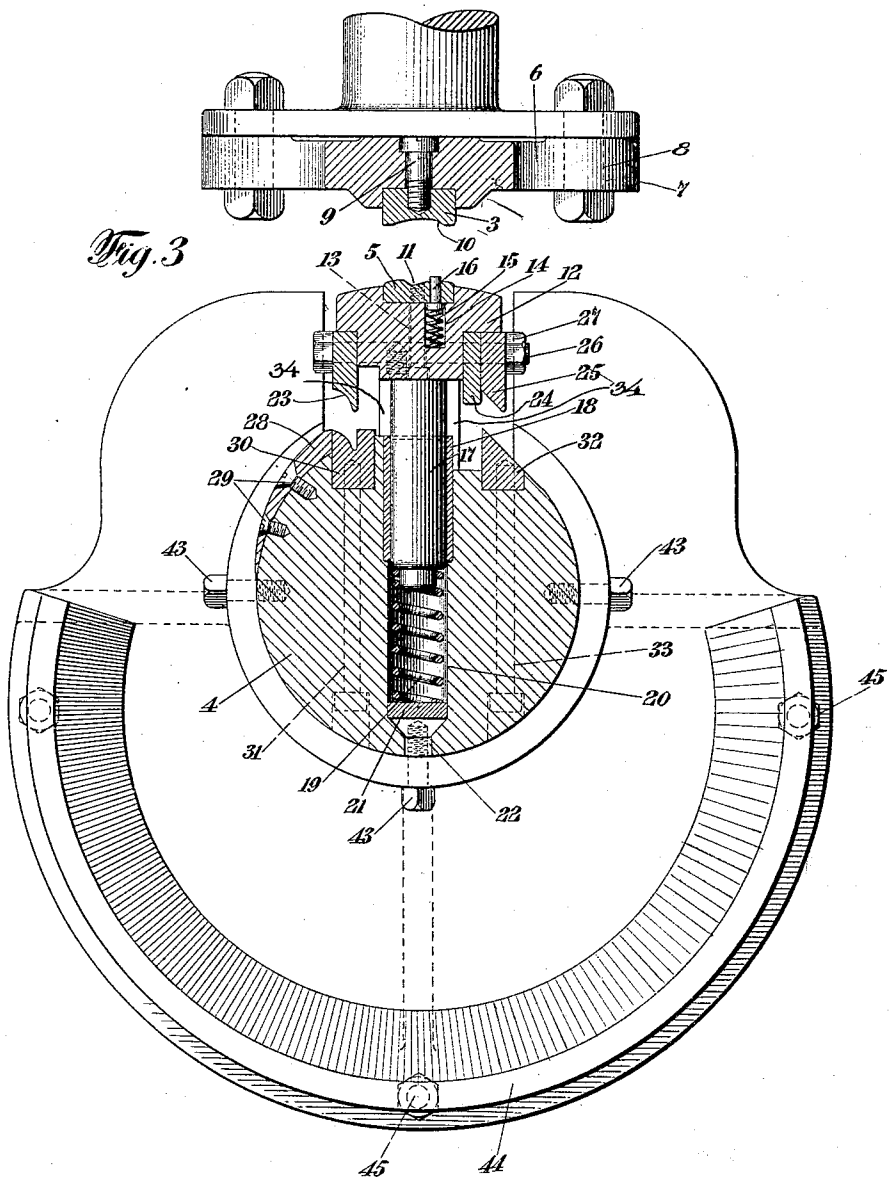
3 SHEETS—SHEET 3.

Fig. 3



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UNITED STATES PATENT OFFICE.

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SEAMER.

1,306,449. Specification of Letters Patent. Patented June 10, 1919.

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To all whom it may concern:

Be it known that I, FLOYD D. STOWE, of Wilmington, in the county of New Castle, and in the State of Delaware, have invented a certain new and useful Improvement in Seamers, and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to seamers for joining edges of metal sheets, but it relates especially to an apparatus for joining the edges of a blank of sheet metal so as to form the side seams in containers or kegs made of sheet metal, such for example, as powder keys.

The object of my invention is to provide a seamer, which is designed to fold the edges of metallic sheets and which will unite the folded edges together; which is effective in its operation; which may be readily dismantled so as to replace the parts that wear, especially the reciprocating parts; which is so arranged that the parts may be readily adjusted to adjust the positions of the edges of the sheet of metal operated upon; and which has many other advantages which will appear from a consideration of the detailed description of my invention which is given hereinafter.

While my invention is capable of embodiment in many different forms, for the purpose of illustration I have shown only one form thereof in the accompanying drawings, in which,

Figure 1 is a side elevation of a complete press provided with my seaming apparatus,

Fig. 2 is a side elevation partly in section of the seaming devices carried thereby,

Fig. 3 is a transverse section of the same, and

Fig. 4 is a plan view of the upper closing punch.

In the drawings I have provided a press 1, having a power-operated plunger 2, carrying an upper closing punch 3. Below the upper closing punch 3, the press 1 carries a support 4 which extends through the press and which is screw-threaded on its end to receive a screw-threaded sleeve 4^a. The support 4 carries the lower closing die 5 and the upper and lower folding punches and die. The upper closing punch 3 is carried on a casting 6 having ears 7 with holes 8, to receive screws for securing the casting 6 to the plunger 2. The casting 6 has a plurality of screws 9 which extend downwardly therethrough so as to secure the upper closing punch 3 to the same. Upon the lower surface the upper closing punch 3 has a recess 10 to receive the folded portions of the united edges of the sheet metal blank. The lower closing die 5 has a recess 11 for a purpose similar to that for which the recess 10 is provided. The lower closing die is carried on a longitudinal bar 12 to which it is secured by means of screws 13 which extend upwardly through the body of the same and are screw-threaded to the die. In the body of the bar 12 there are circular recesses 14, the purpose of which is to accommodate springs 15, which support plungers 16. These plungers 16 normally project above the surface of the lower closing die so as to act as guides for the folded edges of the sheet metal blank in the manner hereinafter to be described. The bar 12, is supported for a vertical reciprocating movement upon plungers 17, which are screw-threaded to the bar 12, and which extend downwardly therefrom into the body of the support 4, where they are received in replaceable bushings 18 and supported upon springs 19 in recesses 20 in the body of the support 4. Plates 21 are provided beneath the springs 19, and holes 22 connect with the recesses 20 so as to permit the insertion of a bar to remove the plungers 17 when dismantling the apparatus for repairs. The bar 12, also carries an upper folding punch 23 at the left of the apparatus and an inside upper folding die 24 and an outside upper folding die 25 at the right side of the apparatus. The punch 23 and dies 24 and 25 are secured in place by bolts 26 having nuts 27 thereon, said bolts 26 passing through the punch and dies and through the body of the bar 12. The support 4 at the left of the apparatus is provided with a body guide strip 28 which is attached to the support by means of screws 29. The guide strip 28 builds the left side of the support 4 up to the proper level. Adjacent to the upper end of the guide strip 28 the support 4 carries a lower folding die 30 at the left of the apparatus, which is secured in place by screws 31, passing through the body of the support 4 and screwed into the lower folding die. At the right of the apparatus the support 4 carries a lower folding punch 32, which is secured to the support 4 by means of screws

33, located in a similar manner to screws 31. Upon the under surface of the bar 12, adjustable guides 34 are provided which register with recesses 35 in the support 4 and extend into the same when the bar 12 is moved downwardly in the manner to be hereinafter described. By changing the size of the guides 34 the position of the edges of the sheet of metal operated upon may be adjusted as desired. At the outer end of the support 4 I provide an adjustable stop bolt 36, which passes through an apertured projection 37 on the front of the bar 12, and into the body of the support 4 where it is maintained in its adjusted position by a lock nut 38. At the rear of the support 4 a similar stop bolt 39 is provided which is screw-threaded into the body of the support 4 and passes through an apertured projection 40 on the bar 12 and is provided with a pair of lock nuts 41 at its upper end. Near the inner end of the support 4 is also provided a guide plate 42 which is attached to the support by means of screws 43. A semicircular flanged plate 44 is attached to the face of the guide plate 42 by bolts 45.

In the operation of the apparatus, when it is desired for example, to produce the cylindrical body of a sheet metal keg, such as a powder keg, the rectangular blank is bent into an approximately circular form by the operator, and the blank is then pressed forward against the guide plate 42, with the free edges of the blank adjacent to the guides 34, the flanged plate 44 with its inclined surface guiding the inner end of the curved blank into its proper position, so as to move the free edges of the blank against the guides 34. Upon the next descent of the plunger 2, the upper closing punch 3 will contact with the lower closing die 5, thereby moving the bar 12 downwardly and bringing the upper folding punch 23 and lower folding die 30 and the inside and outside upper folding dies 24 and 25, and the lower folding punch 32 into coöperation. The left edge of the blank will have then been provided with a folded edge projecting upwardly, and the right edge of the blank will be provided with a downwardly projecting folded edge. As soon as the bar 12 moves upwardly, which will be effected by the extension of the springs 19, upon the next upward stroke of the plunger 2, the edges of the blank will be released from the folding punches and dies and the edges of the blank may be then moved from beneath the bar 12. The two edges of the blank are then united by placing the right edge over the left edge and inserting the edges of the blank over the lower closing die 5 and beneath the upper closing punch 3. The seam is positioned by placing the folded left edge of the blank against the sides of the plungers 16. Upon the next downward stroke of the plunger 2, the upper closing punch 3 will co-act with the lower closing die 5, and bind the edges of the blank securely together. The recesses 10 and 11 will fold the body of the blank slightly around the folded edges of the blank, thereby securing the folded edges permanently in position. If desired, the press may be made to operate continuously and one blank after another may be treated in the manner described to unite the edges thereof and form the cylindrical sides of the sheet metal kegs. Whenever desired, the position of the edges of the blank before the folding operation may be adjusted by inserting guides 34 of different sizes, according to the position of the edges desired. The wear upon the reciprocating supports for the bar 12 will fall upon the bushings 18, which may be readily removed and replaced whenever desired in a minimum amount of time and with a minimum degree of work.

While I have described my invention above in detail, I wish it to be understood that many changes may be made therein without departing from the spirit of my invention.

I claim:

1. In a seamer, a fixed supporting member having dies mounted thereon, a punch member for coöperating with said dies, one of said members being provided with a recess, a limiting stop pin adapted to be engaged by the edge of the sheet to be seamed and having one end shaped to fit said recess, whereby pins of different sizes may be selectively inserted in said recesses, and a recess in the other of said members engaged by said stop pin in all positions thereof.

2. In a seamer, a fixed supporting member having dies mounted thereupon, a punch member for coöperating with said dies, means for guiding said punch member with reference to the dies comprising a plurality of cylindrical plungers working in recesses in said fixed support, and a stop pin in one of said members adapted to be engaged by the edge of the sheet to be seamed, and engaging, in all positions thereof, in a recess in the other of said members.

In testimony that I claim the foregoing I have hereunto set my hand.

FLOYD D. STOWE.

Witnesses:
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